

ROBINAIR



Operating Manual, Model 348002K/348012K
Recovery/Recycling/Recharging Unit
For R-12 and R-134a Refrigerants 1

ROBINAIR

Refrigerant Recovery,
Recycling and Recharging Station

Series: 348002K/348012K

Refrigerants: R-12 and R-134a

⚠ WARNING ⚠

PRESSURIZED TANK CONTAINS LIQUID REFRIGERANT. OVERFILLING OF THE TANK MAY CAUSE VIOLENT EXPLOSION AND POSSIBLE INJURY OR DEATH. Refer to the instruction manual for tank specifications and ordering information. Do not recover refrigerants into a non-refillable storage container! Federal regulations require refrigerant to be transported only in containers meeting DOT spec. 4BW or DOT spec. 4BA.

ALL HOSES MAY CONTAIN LIQUID REFRIGERANT UNDER PRESSURE. Contact with refrigerant may cause injury. Wear proper protective equipment, including safety goggles. Disconnect hoses with extreme caution.

HIGH VOLTAGE ELECTRICITY INSIDE PANELS. RISK OF ELECTRICAL SHOCK. Disconnect power before servicing unit. Refer to the instruction manual.

TO REDUCE THE RISK OF FIRE, avoid the use of an extension cord because the extension cord may overheat. However, if you must use an extension cord, use No. 14 AWG at the minimum and as short as possible. Do not use this equipment in the vicinity of spilled or open containers of gasoline or other flammable substances.

Use this equipment in locations with mechanical ventilation that provides at least four air changes per hour or locate the equipment at least 18 inches above the floor.

Make certain all safety devices are functioning properly before operating the unit. Before operating, read and follow the instructions and warnings in this manual.

CAUTION: SHOULD BE OPERATED BY QUALIFIED PERSONNEL. Operator must be familiar with air conditioning and refrigeration systems, refrigerants and the dangers of pressurized components.

Use only with R-12 or R-134a. This equipment is not designed for any other purpose than recovering, recycling or recharging refrigerants! Do not mix refrigerant types!

ATTENTION!

Ce réservoir sous pression contient du frigorigène liquide. S'il est surchargé, ce réservoir peut exploser et causer des blessures ou la mort.

ATTENTION. Débrancher avant la maintenance.

ATTENTION. Pour réduire les risques d'incendie, ne pas utiliser de cordon prolongateur de section inférieure à 14 AWG de façon à éviter la surchauffe du cordon.

ATTENTION. Utiliser seulement du frigorigène R-134a.

OPERATING NOTES

At temperatures exceeding 120°F / 49°C, wait 10 minutes between recovery jobs.

R-12 and R-134a WARNINGS!

Use the Series 348002K/348012K only with R-12 or R-134a! Cross-contamination with other refrigerant types will cause severe damage to the A/C system and to service tools and equipment. Do not mix refrigerant types through a system or in the same container!

Avoid breathing A/C refrigerant and lubricant vapor or mist. Exposure may irritate eyes, nose and throat. To remove R-12 or R-134a from the A/C system, use service equipment certified to meet the requirements of SAE-J2210 (R-12 or R-134a recycling equipment). If accidental system discharge occurs, ventilate work area before resuming service.

R-12 or HFC-134a service equipment or vehicle A/C systems should not be pressure tested or leak tested with compressed air. Some mixtures of air/HFC-R-12 /R-134a have been shown to be combustible at elevated pressures. These mixtures are potentially dangerous and may result in fire or explosion causing injury or property damage.

Additional health and safety information may be obtained from refrigerant and lubricant manufacturers.

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Mfd. by Robinair, SPX Corporation, Montpelier, OH 43543

This manual contains important safety procedures concerning the operation, use, and maintenance of this product. Failure to follow the instructions contained in this manual may result in serious injury. If you are unable to understand any of the contents of this manual, please bring it to the attention of your supervisor. Do not operate this equipment unless you have read and understood the contents of this manual.

The 348002K and 348012K models are designed to be used on R-12 and R-134a vehicles. They are compatible with existing service equipment and standard service procedures.

The 348002K model is UL-listed. The 348012K is CE approved. Both are single pass systems that meet the SAE specifications for recycled refrigerant.

To validate your warranty, complete the warranty card attached to your unit and return it within ten days from date of purchase.

GLOSSARY OF TERMS

A/C System	The air conditioning system being serviced.
Unit	The refrigerant recovery/recycling/recharging unit.
External Storage Vessel	The refillable refrigerant storage vessel designed specifically for this unit.
Source Tank	A disposable tank of new refrigerant used to refill the external storage vessel.

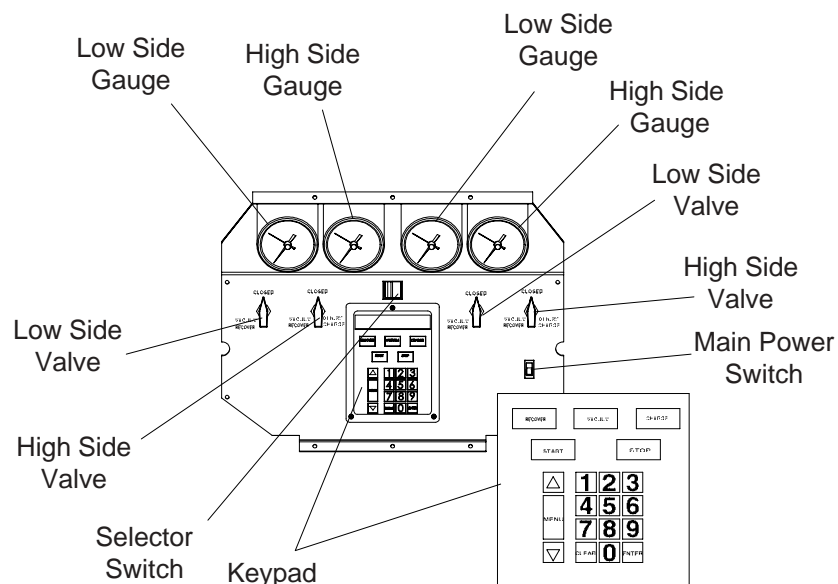
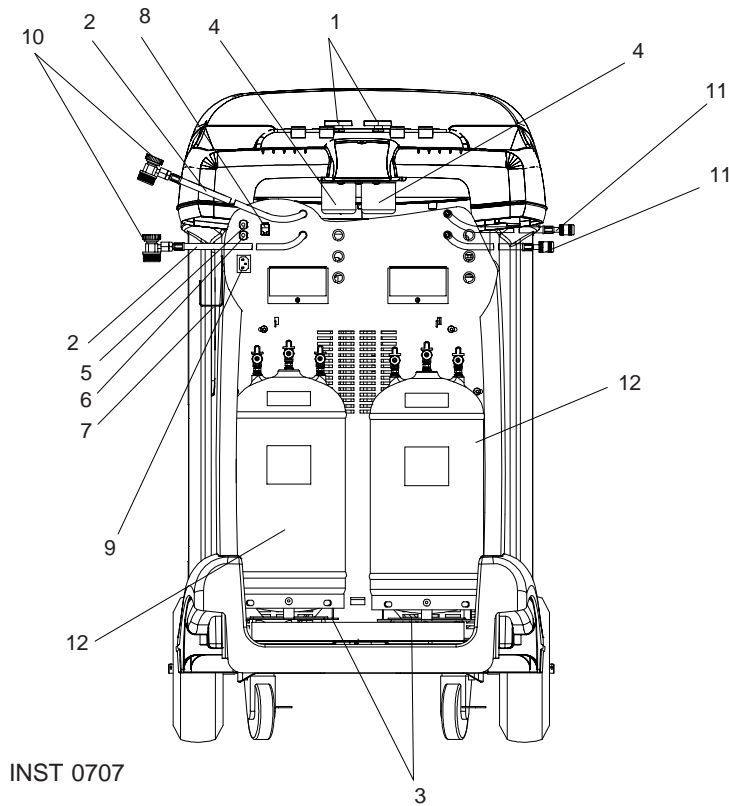


Diagram of the 348002K Control Panel

INST 0706

*Diagram of Unit's Components—
External View*

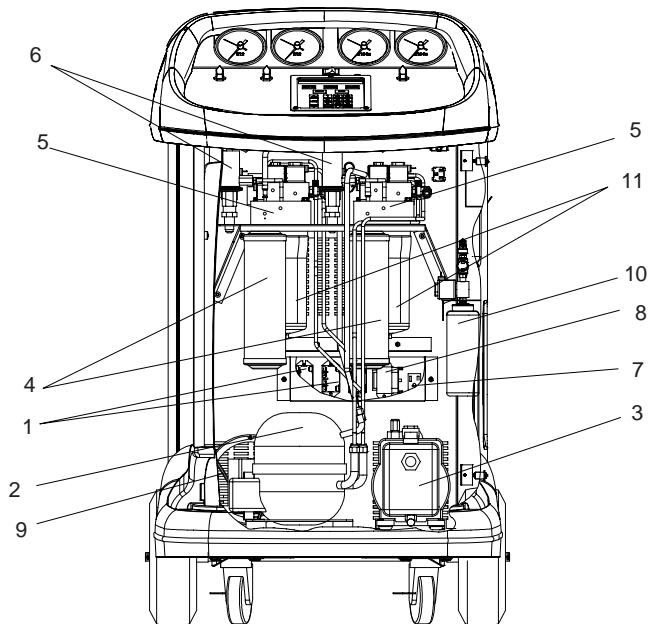


INST 0707

1. Oil Injection Valves
2. R-134a Hoses
3. Scales
4. Oil Injection Bottles
5. 15 Amp Breaker
6. 3 Amp Breaker
7. Hose Holders
8. RJ45 Upgrade Port
9. Power Cord Receptacle
10. Quick Couplers
11. R-12 Hoses
12. External Storage Vessel (ESV)

*Diagram of Unit's Components—
Internal View*

1. Relays
2. Compressor
3. Vacuum Pump
4. Filter
5. Manifold Block
6. Air Purge Assembly
7. Vacuum Pump Receptacle
8. Transformer
9. Fan
10. Oil Drain Bottle
11. Accumulator



INST 0708

INITIAL SET-UP

CAUTION! R-134a systems have special fittings (per SAE specifications) to avoid cross-contamination with R-12 systems. Do not attempt to adapt your unit for another refrigerant — system failure will result! Read and follow all warnings at the beginning of this manual before operating the unit.

CAUTION! Avoid the use of an extension cord because the extension cord may overheat. However, if you must use an extension cord, use a No. 14 AWG minimum and keep the cord as short as possible.

IMPORTANT!
You must press the **MENU** key to access all the functions.

1. Lock both front casters of the unit by stepping on the cam brake levers, plug the power cord into the power cord receptacle (Item 9 in the INST 0707 drawing on page 3). Turn on the MAIN POWER switch.
2. Press **MENU**.
3. Use the **UP** and **DOWN** arrows to select LANGUAGE SELECTION. Press **ENTER**.
4. Use the **UP** and **DOWN** arrows to scroll through the language options and press **ENTER** to select a language and exit LANGUAGE SELECTION.
5. Press **MENU**. Use the ARROW keys to go to SELECT AUTO RESTART. Press **ENTER**.
6. Use the **UP** and **DOWN** arrows to toggle between AUTO RESTART ON and AUTO RESTART OFF. Press **ENTER** to select.

NOTE: See the Operating Guidelines section of this manual for a description of these functions.

7. Press **MENU**. Use ARROW keys to go to SELECT PROMPT. Press **ENTER**.
8. Use the **UP** and **DOWN** arrows to toggle between BASIC PROMPTS and ADVANCED PROMPTS. Press **ENTER** to select.

NOTE: See the Operating Guidelines section of this manual for a description of these functions.

VACUUM PUMP INITIAL FILL

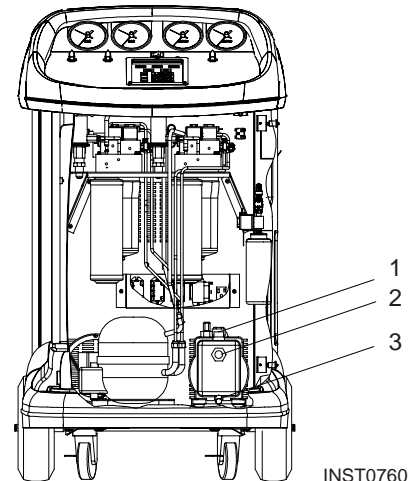
1. Press **VACUUM** to get to the VACUUM mode. Press **START** to go into VACUUM.

NOTE: The vacuum pump is shipped without oil in the reservoir. Before starting the pump, oil must be added to the pump or damage may occur.
2. Close all manifold valves on the control panel.
3. Remove bolts holding the door closed and open the door.
4. Remove the black plastic plug from the fill port on the top of the vacuum pump.
5. Attach the oil fill tube to the 16 oz. bottle of vacuum pump oil provided in the accessory kit.
6. While the vacuum pump is running, add oil until it reaches the center of the sight glass. Press **STOP**. The vacuum pump is now filled to the proper level with oil.
7. Pour oil (approximately 12 oz.) into the fill port of the vacuum pump until the oil appears at the bottom of the sight glass. Press **ENTER**.
8. Replace the plug in the fill port.
9. Press **STOP** to exit.
10. Close the door and replace the bolts holding the door shut.

IMPORTANT!
For maximum performance, be sure to change the vacuum pump oil frequently.

IMPORTANT!
Be sure the pump is running when adding oil.

1. Oil Fill Port
2. Sight Glass
3. Oil Drain



INST0760

INSTALLATION ROUTINE

1. Press **MENU**. Use the ARROW keys to go to the INSTALLATION ROUTINE.
2. Press **ENTER**. The display toggles between CONNECT LS RXX HOSE TO SOURCE TANK and TURN ALL VALVES TO VACUUM/RECOVER AND PRESS START TO BEGIN. Follow the on-screen prompts.
3. Remove the service hoses from the accessory kit and remove the plugs from the hoses using a pair of pliers.
4. Attach the service hoses to the high and low side bulkheads on the rear of the unit. Attach the R-134a hoses to the left rear. Attach the R-12 hoses to the right rear. Attach the RED hoses to the bulkheads labeled HIGH and the BLUE hoses to the bulkheads labeled LOW.

5. Press **START**. The unit automatically evacuates the system for 5:00 minutes to remove any air from the external storage vessel (Ensure that all tank valves are open).

IF THE SELECTOR SWITCH IS SET TO R-134A:

6. Connect the lowside service coupler to the source tank valve, using the adapter supplied with the unit, when the 5:00 minute evacuation is complete. Open the service coupler and turn manifold valves to RECOVER/VACUUM.

IF THE SELECTOR SWITCH IS SET TO R-12:

7. When the 5:00 minutes evacuation is complete, connect the low side hoses the hose adapter supplied with the unit. Attach the adapter to the source tank.

USING THE SELECTION MENU

1. Press **MENU**. The top line of the display reads LANGUAGE SELECTION.
2. Use the **UP** and **DOWN** arrows to scroll through the menu choices. The menu choices are (in order of appearance):
3. Press **ENTER** to make a choice from the menu. Press **STOP** to terminate any process.

- | | |
|---------------------------|---|
| 1. LANGUAGE SELECT | 7. TANK FILL |
| 2. CHANGE FILTER | 8. VACUUM OIL TIME |
| 3. FILTER WEIGHT | 9. INSTALLATION ROUTINE |
| 4. SELECT AUTO RESTART | 10. SELECT PROMPTS |
| 5. MEASUREMENT UNITS | 11. CHANGE DEFAULT (Password Protected) |
| 6. CHANGE VACUUM PUMP OIL | |

CHANGE FILTER

The filter-drier removes acid, particulates and water from the refrigerant. Change the filter-drier after 150 pounds of refrigerant has been filtered. See the **DRIER RECOVERED LBS.** section on the following page as well as the Maintenance Section on page 20 for instructions.

USING THE SELECTION MENU (continued)

4-a. TANK FILL (R-12 Users)

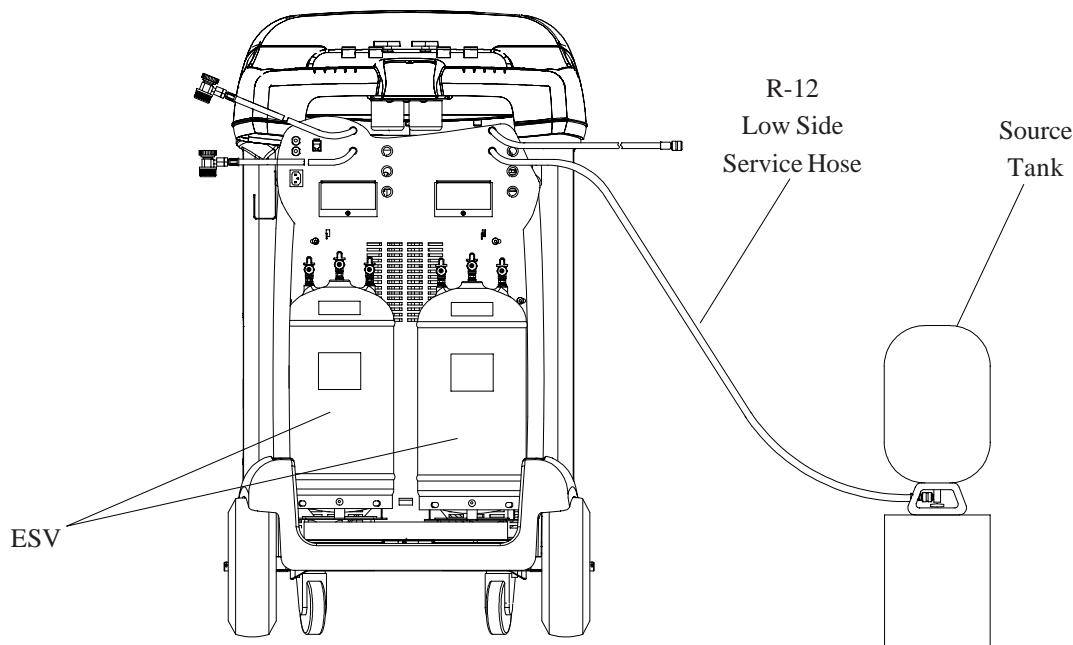
NOTE: If using a refillable tank, place the tank upside down and connect the lowside service hose to the vapor valve.

Set SELECTOR switch to R-12:

1. Connect the 6" yellow adapter to the end of the low side service hose.
2. Connect the low side service hose to the source tank and open valve.
3. Select TANK FILL from the Selection Menu.
4. Press **ENTER**. Then press **START** and the tank automatically refills. The unit stops when a sufficient amount of refrigerant has been transferred to the ESV- or - the source tank is empty.

NOTE: Press **STOP** if you wish to stop fill before it completes.

5. Close the valve on the source tank.
6. Disconnect the 96" blue service hose from the adapter, then disconnect the 6" yellow adapter from the source tank.
7. Press **STOP** to exit.



INST0710

USING THE SELECTION MENU (continued)

4-b. TANK FILL (R-134a Users)

NOTE: If using a refillable tank, place the tank upside down and connect the lowside service hose to the vapor valve.

Set the SELECTOR switch to R-134a:

1. Connect the tank to quick-coupler adapter (supplied with the unit) to the low side service hose.
2. Connect the low side service hose to the source tank and open valve.
3. Select TANK FILL from the Selection Menu.
4. Press **ENTER**. Then press **START** and the tank automatically refills. The unit stops when a sufficient amount of refrigerant has been transferred to the ESV- or - the source tank is empty.

NOTE: Press **STOP** if you wish to stop fill before it completes.

5. Close the valve on the source tank.
6. Disconnect the 96" blue service hose from the adapter, then disconnect the adapter from the source tank.
7. Press **STOP** to exit.

VACUUM OIL TIME

This feature displays the number of hours the vacuum pump has been used since the last oil change and needs reset after an oil change. Change the vacuum pump oil after every 10 hours of operation. See the Maintenance section on page 20 of this manual for instructions.

USING THE SELECTION MENU (continued)

FILTER WEIGHT

This function is used to show the operator how many pounds of refrigerant have been recovered since the last filter change.

1. Select FILTER WEIGHT from the menu. Press **ENTER**.
2. The display shows amount of refrigerant recovered since last filter change.
3. If display reads greater than 300 lbs., go to MENU/CHANGE FILTER
4. Press **STOP** to exit.

SELECT PROMPT

Use the BASIC PROMPT option to receive step-by-step, on-screen prompting through any procedure. Use ADVANCED PROMPT once you know the procedure and no longer need the step-by-step routine.

1. Choose SELECT PROMPTS from the menu. Press **ENTER**.
2. Toggle between BASIC/ADVANCED using the **ARROW** keys.
3. Press **ENTER** to select the current choice.

SELECT AUTO RESTART

The AUTO RESTART ON option is used to automatically restart the unit if a pressure rise is detected by the unit during the five minute waiting period after recovering refrigerant. If AUTO RESTART OFF is selected, the operator must watch the gauges for a pressure rise and manually restart the recovery process if a pressure rise is detected.

1. Select AUTO RESTART. Press **ENTER**.
2. Use **ARROW** keys to toggle between the two options.
3. Press **ENTER** to select the current choice.

USING THE SELECTION MENU (continued) MEASUREMENT UNITS

1. Select MEASUREMENT UNITS from the menu. Press **ENTER**.
2. Toggle between UNITS ENGLISH and UNITS METRIC using the **ARROW** keys.
3. Press **ENTER** to select the current choice.

LANGUAGE SELECTION

The operator can choose between English, Spanish, French, or German.

1. Scroll through the selection menu to LANGUAGE SELECTION and press **ENTER**.
2. Use the **UP** and **DOWN** arrows to scroll through the languages and then press **ENTER** to save the current choice.

INSTALLATION ROUTINE and FIRST FILL

The INSTALLATION ROUTINE is an automatic function that is used only for initial set-up. See the Initial Set-Up section of this manual for details.

USING THE CONTROL PANEL

The control panel has various components that control specific operating functions.

MAIN POWER SWITCH — Supplies electrical power to the control panel.

DIGITAL DISPLAY — Used on the visual interface between the operator and the machine.

LOW SIDE MANIFOLD GAUGE — Connects to an A/C system and shows the system's low side pressure.

HIGH SIDE MANIFOLD GAUGE — Connects to an A/C system and shows the system's high side pressure.

LOW SIDE VALVE — Controls the low side flow from the A/C system through the unit. It has two positions: 1) Vacuum/Recover, and 2) Closed.

HIGH SIDE VALVE — Controls the high side flow from the A/C system through the unit. It has three positions: 1) Vacuum/Recover, 2) Closed, 3) Oil Inject/Charge.

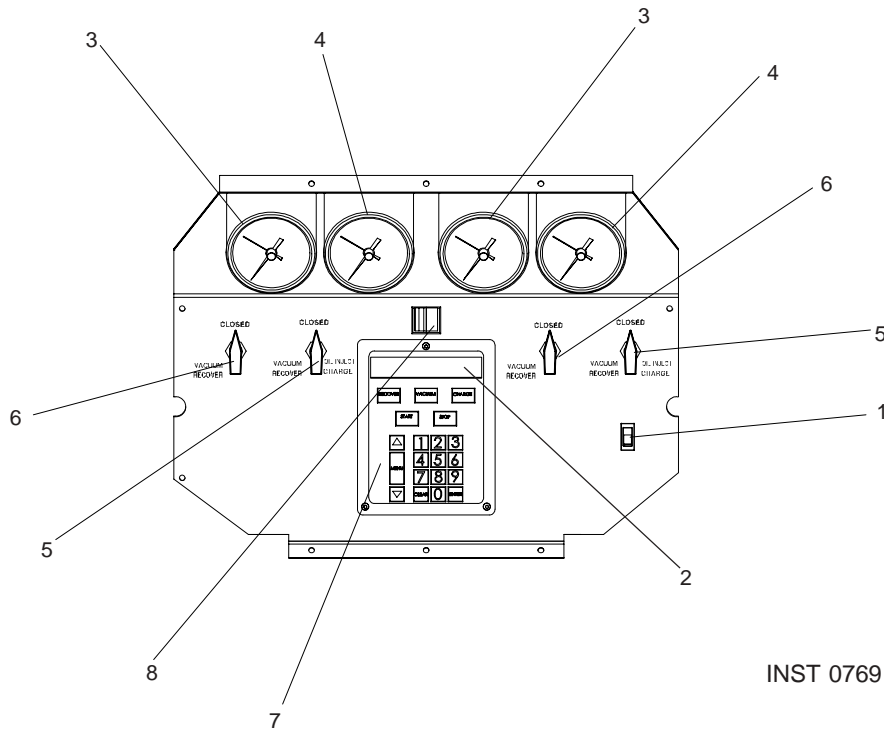


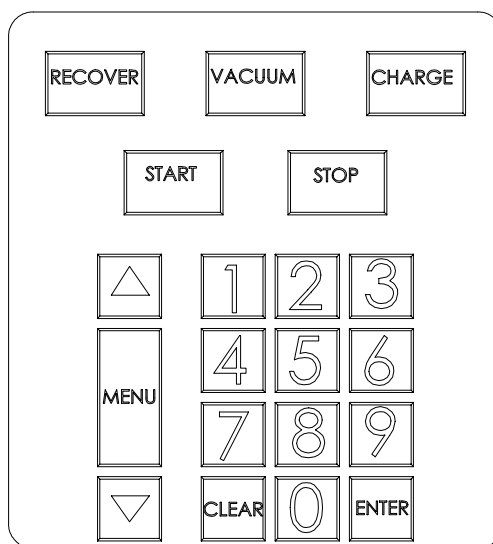
Diagram of Control Panel

- | | |
|----------------------|--------------------|
| 1. Main Power Switch | 5. High Side Valve |
| 2. Display | 6. Low Side Valve |
| 3. Low Side Gauge | 7. Keypad |
| 4. High Side Gauge | 8. Selector Switch |

KEYPAD FUNCTIONS

In addition to the number keys, the keypad contains special keys that accomplish specific operating functions.

- **CHARGE** — Automatically charges the A/C system with the programmed amount of refrigerant.
- **CLEAR** — Clears indicated data from the unit's memory.
- **ENTER** — Enters programmed data into the unit's memory.
- **MENU** — Enters the selection menu.
- **RECOVER** — Activates the recovery sequence.
- **START** — Begins a function.
- **STOP** — Terminates a function.
- **UP/DOWN ARROWS** — Used for scrolling through the menu items.
- **VACUUM** — Activates the vacuum and automatic recycling sequence.



INST0712

Diagram of Keypad

OPERATING TIPS

Follow the recommended service procedure for the containment of R-12 and R-134a.

The recovery compressor is *not* a vacuum pump. The compressor pulls the A/C system to a partial vacuum only. You must use the unit's vacuum cycle to remove moisture from the A/C system. We recommend a minimum 15-minute vacuum with more time as required by the system manufacturer.

This unit is designed to be used with the manifold gauge set built into the control panel.

It includes a 6 cfm (142 l/m) vacuum pump for fast, thorough evacuation. Be sure to change the vacuum pump oil after 10 hours of vacuum pump use.

R-12 and R-134a systems require special oils. Refer to the A/C system manufacturer's service manuals for oil specifications.

NOTE: The following operating instructions are written to be used with the BASIC PROMPTS mode of operation. It is recommended that the BASIC PROMPTS mode is used until the operator becomes very familiar with the operation of the unit. See the OPERATING GUIDELINES section of this manual for instructions on how to select between BASIC PROMPTS and ADVANCED PROMPTS.

RECOVERING REFRIGERANT



WARNING



Always wear safety goggles when working with refrigerant. Read and follow all warnings at the beginning of this manual before operating the unit.

1. Connect the power cord to the back of the unit and plug into the proper voltage outlet.
2. Turn on the MAIN POWER and empty the oil drain bottle located on the right hand side of the unit.
3. Press **RECOVER**.
4. If 300 or more pounds of refrigerant has been recovered since the last filter-drier change, the display reads **REPLACE FILTER**.
5. Connect the high and low side hoses to the A/C system service ports. For R-134a, open the coupler valves.
6. Place both High and Low Side manifold valves in the Recover/Vacuum position on the control panel.
7. If the system pressure is below 25 psi, the display reads **LOW SYSTEM PRESSURE** until the pressure increases or the **START** button is pressed.
8. If the unit has refrigerant in the low-side plumbing, it begins the clearing process and displays **CLEARING**. If you wish to skip the clearing operation or stop the clearing prematurely, press **START**.

NOTE: An inaccurate recovery weight may result if the clearing operation is not completed.

9. When the system has recovered to a vacuum level of approximately 13 in. Hg., the compressor automatically shuts off.

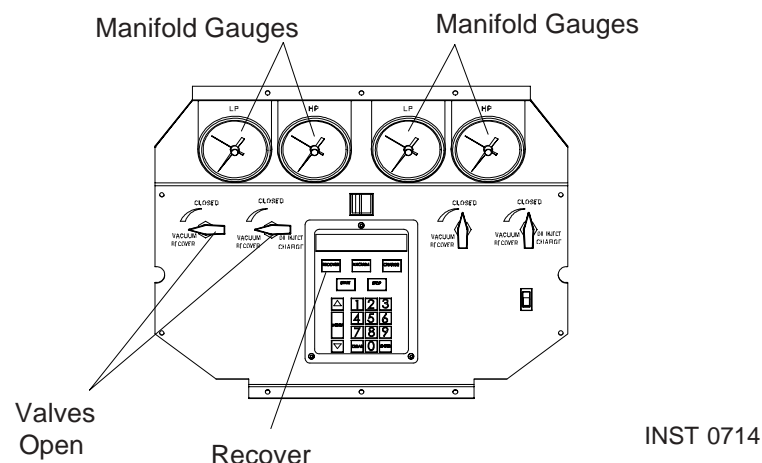
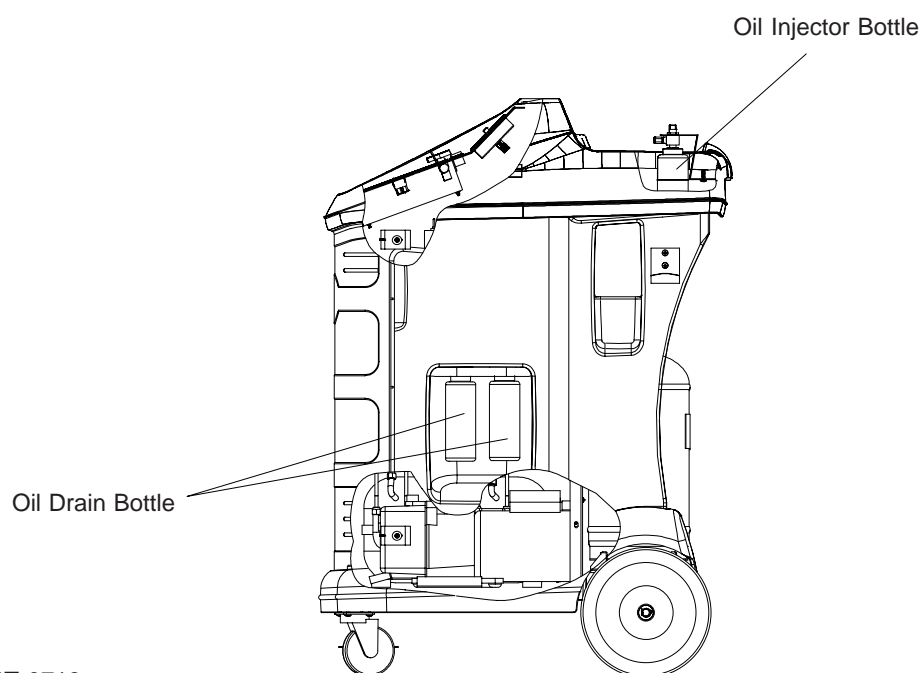


Diagram of Control Panel During Recovery

10. The unit then goes into automatic oil drain and the display reads OIL DRAINING. Oil draining can require up to 90 seconds to complete.
11. After the oil drain is complete, the display alternates between:
RECOVERY COMPLETE CHECK OIL BOTTLE.
RECOVERED XXX.XX lbs. RECOVERED XXX.X lbs.
12. Check the oil drain bottle and note the amount of oil that was removed from the A/C system. This is the amount of oil that must be charged into the A/C system after evacuation is complete.
13. To ensure complete recovery of refrigerant, wait 5 minutes and watch the manifold gauges for a rise in pressure above 0 in. Hg. A pressure rise may occur if there was freezing in the A/C system during recovery. If a rise occurs, press **START** to repeat the recovery process. Repeat as needed until the system pressure holds for two minutes, then press **STOP**. The AUTO RESTART ON option can be used to automatically restart the recycling process if the unit detects a pressure rise after five minutes. See the Selection MENU section for details. This process meets SAE Spec J2211.
14. Press **STOP** to exit.

Recovery is now complete. You are now ready to make any repairs to the A/C system, if necessary, or advance to the Evacuation Process.

Diagram of the Oil Injection System



INST 0713

EVACUATING THE A/C SYSTEM



WARNING



Always wear safety goggles when working with refrigerant. Use only authorized refillable refrigerant tanks. Read and follow all warnings at the beginning of this manual before operating the unit. In addition to the number keys, the keypad contains special keys that accomplish specific operating functions.

IMPORTANT!

You should evacuate for at least 15 minutes to ensure adequate moisture and contaminant removal.

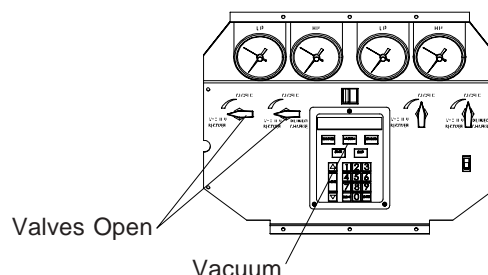
IMPORTANT!

If the vacuum pump has run for 10 or more hours without an oil change, the message **VACUUM OIL TIME = X hr. X min. X sec** appears on the display. Change the pump oil following the procedures in the **MAINTENANCE INSTRUCTIONS**.

1. Connect the service hoses to the vehicle. R-134a users: Open the coupler valves.
2. Place both High and Low Side manifold valves in Recover/Vacuum.
3. Turn the unit on and press **VACUUM**.
4. If the vacuum pump has been run more than 10 hours since the last oil change, the display reads: **VACUUM OIL TIME = X hr. X min. X sec**. Press **STOP** to change the vacuum pump oil or press **START** to continue. Instructions for changing the vacuum pump oil are located in the maintenance section of this manual.

NOTE: Vacuum Pump oil should be changed after 10 hours of use to maintain maximum performance and endurance levels.

5. If the system being evacuated contains a pressure over 25 psi at any point during the evacuation, the display reads **HIGH SYSTEM PRESSURE**. This message indicates that the A/C system contains refrigerant. Press **RECOVER** to continue. After recovery is complete, return to Step 1 to evacuate the A/C system.
6. If the pressure is below 25 psi, the user is prompted to press **START** to **VACUUM** or press **CHARGE** to use the **VACUUM-CHARGE (VAC-CHG)** feature. If **VACUUM** is selected, the unit vacuums the system only and user interaction is required to enter the **CHARGE** mode. If the **VACUUM-CHARGE** feature is chosen, the unit automatically charges the system after evacuation is complete.



The Control Panel During Evacuation

INST 0726

NOTE: If any oil was drained from the system during recovery, DO NOT use the VAC-CHG feature. The oil must be replenished into the A/C system, which is not possible when the VAC-CHG function is used.

VACUUM

1. Press **ENTER** to accept the default evacuation time of 15:00 minutes or enter the desired vacuum time by using the number keys (To enter 10 minutes, press 1 and 10:00 should appear on the display. To enter 1 minute, press 0 then press 1, and 1:00 should appear on the display).
2. Press **ENTER**. The unit evacuates the A/C system and stops when the specified time has elapsed.
3. You are now ready to replenish the A/C system oil (if necessary) or to recharge the system with refrigerant.
4. Press **STOP** to exit.

IMPORTANT!

You should evacuate the A/C system for at least 15 minutes to ensure adequate moisture and contaminant removal.

VAC-CHG

1. Press **CHARGE** to select the VAC-CHG feature.
2. Press **START** to charge the default amount of refrigerant (2.00lb) or use the number keys to enter the desired charge weight. Then press **ENTER**.
3. If the weight entered leaves less than 5 lbs. of refrigerant in the external storage vessel, the VAC-CHG process does not begin and the display reads LOW REFRIGERANT. At this point, refrigerant must be added to the external storage vessel. See the OPERATING GUIDELINES section of this manual for external storage vessel refill instructions and then return to Step 1 of EVACUATING THE A/C SYSTEM.
4. If the external storage vessel contains a sufficient amount of refrigerant, press **ENTER** to accept the default evacuation time of 15:00 minutes or enter the desired vacuum time by using the number keys. Then press **ENTER**.
5. The unit automatically charges the A/C system after the specified vacuum time has elapsed.
6. Advance to Step 6 of RECHARGING THE A/C SYSTEM in this manual to complete the charging process.

REPLENISHING A/C SYSTEM OIL

Before charging the A/C system, you must replenish any oil removed from the A/C system during the recovery process.

1. Select the correct oil for the A/C system being serviced. Refer to the vehicle manufacturer's service manual.

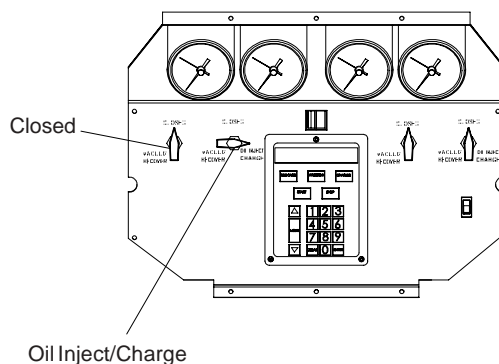
IMPORTANT!
You can charge oil through either the low side or high side, or both, depending on the vehicle manufacturer's recommendation. Just open the appropriate manifold valve or valves.

CAUTION! To prevent air from entering the A/C system, never let the oil level drop below the pick-up tube while charging or replenishing.

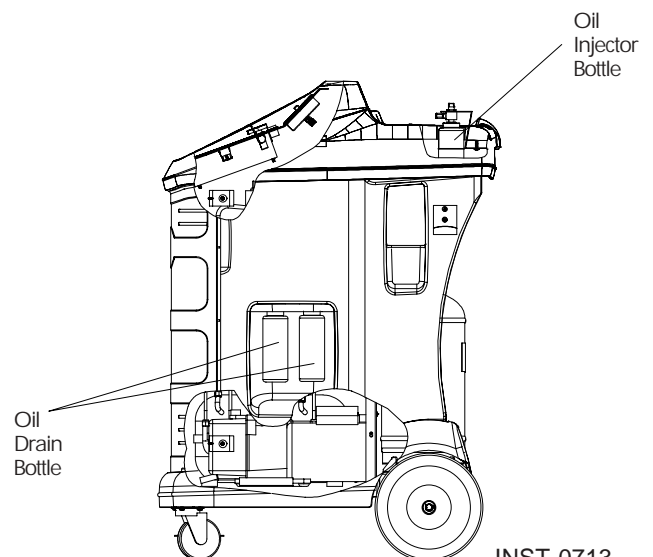
2. Adjust the O-ring around the oil injector bottle to the required oil charge level. For example, if the bottle's oil level is at 4 ounces and you need 1/2 ounce of oil to replenish the A/C system, place the o-ring at the 3 1/2 ounce level.
3. Install the bottle on the oil injection assembly on the back of the unit.

CAUTION! Never open the oil injection valve while there is positive pressure in the A/C system. This action could blow oil back through the bottle vent.

4. Place the Low Side valve in the Closed position. Place the High Side valve in the Oil Inject/Charge position.
5. Turn the oil injection valve at the top of the bottle and watch the level of oil being drawn into the A/C system. This process takes only seconds—watch carefully!
6. Turn OFF the valve when the required oil charge has been pulled into the system.



INST 0770



INST 0713

RECHARGING THE A/C SYSTEM



WARNING



Always wear safety goggles when working with refrigerant. Use only authorized refillable refrigerant tanks. Disconnect hoses with extreme caution!

All hoses may contain liquid refrigerant under pressure. Read and follow all warnings at the beginning of this manual before operating the unit.

1. Press **CHARGE**.
2. Accept either the default weight by pressing **START** or type in a weight with the number keys and press **START** (For example, to program 3 lbs, press 3 and 3.00 lbs will appear on the display. To program 3.25 lbs, press 3-2-5, in that order, and 3.25 lbs will appear on the display).
3. If the weight entered will leave less than 5 lbs. of refrigerant in the refrigerant tank, the charge function will not start and the display will read:

LOW REFRIGERANT

Refrigerant XX.XX lbs.

See the Operating Guidelines section of the manual for refill instructions.

4. Close the Low Side valve. Place the High Side valve in the Oil Inject/Charge position (Note: Use the valves corresponding with the refrigerant you are working with).
5. Upon entering a valid charge weight, the display shows:
CHARGE MODE
AMT. CHARGED XX.XX lbs.
Press **START** to continue.

6. The display will say "Charge complete. Amt. charged XX.XX".
7. Close the high and low side coupler valves and remove the service hoses from the A/C system.
8. Turn off the **MAIN POWER** switch.

The A/C system is now ready for use.

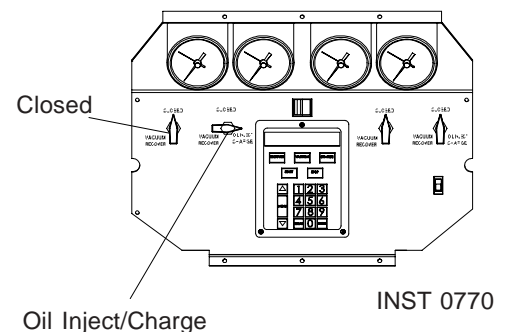
Note: To add less than 1 pound of refrigerant, such as 0.25, press 0-2-5, in that order.

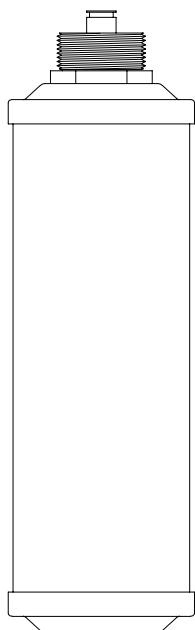
CORRECTING AN INCOMPLETE CHARGE

On occasions the AMT. CHARGED will not finish. The reason for this is that the pressures in the ESV and the A/C system have equaled. To finish the charge, you should:

1. Turn high side valve on the control panel to the closed position.
2. Turn low side valve on the control panel to recover/vacuum position.
3. Start the vehicle and turn on the A/C.
4. The remainder of the charge will be pulled into the A/C system and display will read CHARGE COMPLETE.

IMPORTANT!
You should evacuate the A/C system for at least 15 minutes for adequate moisture and contaminant removal.





Filter-Drier

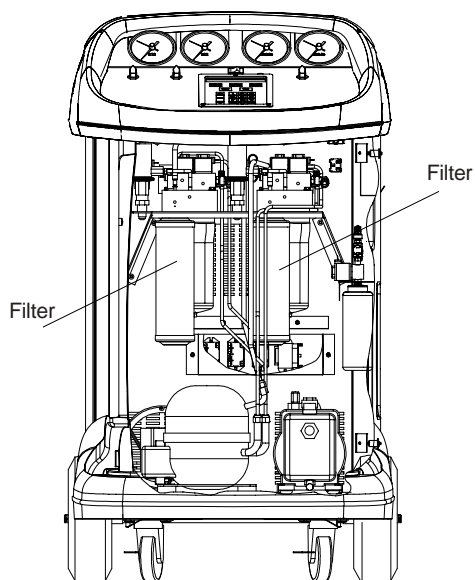
INST0477

REPLACING THE FILTER-DRIER

Order part #34724 for a replacement filter-drier. The filter-drier on this unit is designed to trap acid and particulates and is formulated to remove water from the refrigerant. You must change the filter-drier to assure adequate moisture and contaminant removal.

Typically, you can recycle up to 300 pounds (136 kilograms) of refrigerant between filter changes.

CAUTION! For best results, use Robinair filter-driers (part no. 34724). All performance tests and claims are based on using this specially-blended filter-drier. Use of another may affect performance results.



Location of the Filter-Drier

INST 0716

1. Press **MENU**.
2. Scroll through the menu to **CHANGE FILTER** and press **ENTER**. Display reads: RXX Filter Weight X.XX lbs.
3. Press **START** to begin.
4. Wait for the unit to self clear.
5. When clearing is complete, the display reads **DISCONNECT POWER**. Replace RXX filter.
6. Turn off the main power and unplug the machine.
7. Open the unit door and replace the old filter with the new filter.
8. Close the unit door, plug in the machine, and turn on the Main Power.
9. Close the door to the unit.
10. The filter change is now complete.

CHANGING THE VACUUM PUMP OIL

For maximum vacuum pump performance, change the vacuum pump oil every 10 hours of operation.

1. Press **MENU**.
2. Use the **ARROW** keys to select CHANGE VAC PUMP OIL.
3. Press **ENTER**.

NOTE: Do not connect the service hoses to a vehicle.

4. Ensure that the high side and low side manifold valves are closed and press **START**.
5. Screen displays OIL CHANGE.
6. Allow the vacuum pump to run until it automatically stops (2 minutes).
7. Remove the black plastic plug on the oil fill port of the vacuum pump.
8. Remove the oil drain cap from the vacuum pump and drain the oil into a suitable container for proper disposal.
9. Replace the oil drain cap and press **START**.
10. Screen now toggles between ADD 5 oz. OF OIL TO VACUUM PUMP and PRESS START TO CONTINUE.
11. Attach the flexible tube and cap to the oil bottle and pour five ounces of vacuum pump oil into the fill port.
12. Press **START** and while the vacuum pump is running, slowly add oil until the level is even with the line on the reservoir's sight glass.
13. Press **STOP** and replace the black plastic plug on the fill port.
14. The unit is now ready to operate.

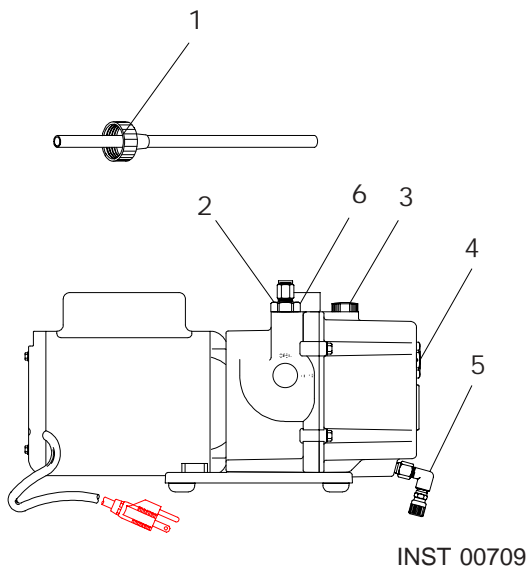
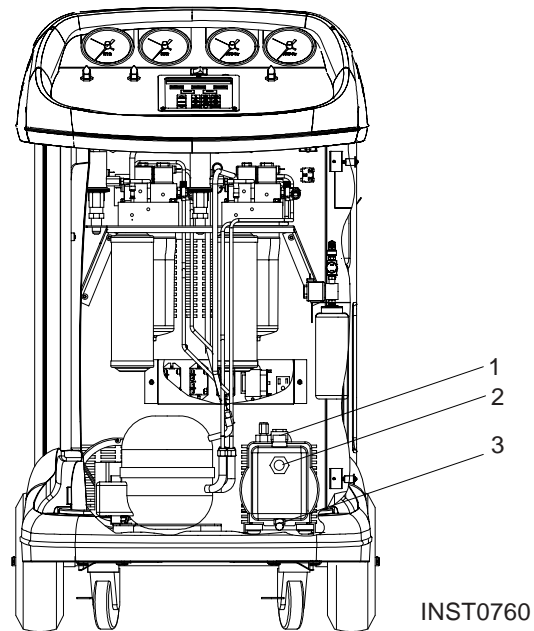


Diagram of Vacuum Pump

1. Oil Filler Tube
2. Pump Exhaust
3. Oil Fill Port
4. Sight Glass
5. Oil Drain Fitting
6. Inlet



1. Oil Fill Port
2. Sight Glass
3. Oil Drain

IMPORTANT!
Inspect the unit periodically for leaks. The manufacturer does not reimburse for lost refrigerant.

CHECKING FOR LEAKS

Every three months, or as specified by local or state laws, you should check the unit for leaks.

1. Turn off the **MAIN POWER** switch, and disconnect the power cord from the outlet.
2. Open door.
3. Use a leak detector to probe all connections for refrigerant leaks. Tighten fittings if a leak is indicated.
4. Close door.

ELECTRICAL PROTECTION

If the circuit breaker trips, all power to the unit is lost. Press the circuit breaker button to reset. The circuit breaker is located near the fuse on the back of the unit.

GENERAL MAINTENANCE

1. On a regular basis, wipe off the unit with a clean cloth to remove grease, dust or other dirt.
2. Periodically check the internal components for leaks—over time, fittings can loosen as the unit is moved. Open the unit door panel and trace lines with a leak detector. Also, check connections on the back of the unit. Tighten any loose fittings or connections you may find.

The following is a list of replacement parts and accessories you may need to service or maintain your unit.

We suggest you keep several filter-driers on hand so you will always be able to change them and complete any recycling job that is in progress.

Premium High Vacuum Pump Oil is also available in handy quart containers or in convenient gallon containers:

Quart (shipped 12 quarts per case) 13203

Gallon (shipped 4 gallons per case) 13204

Because of ongoing product
improvements, we reserve the right
to change design, specifications, and
materials without notice.

348002K Replacement Parts

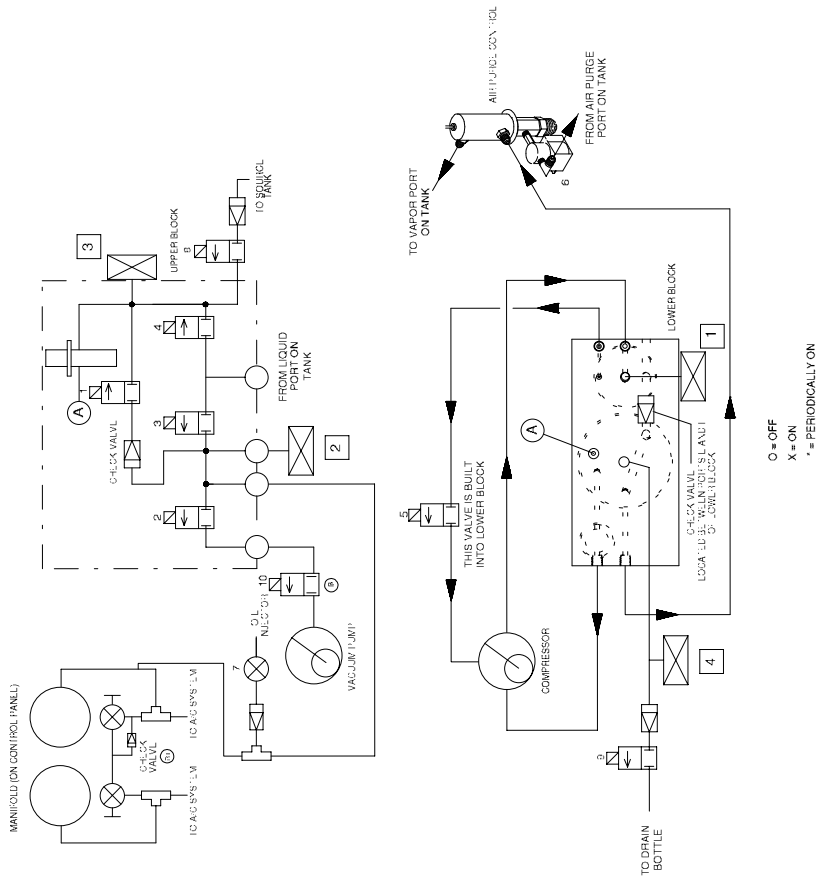
Component	R-12 Replacement Part Number	R-134a Replacement Part Number
96" Red Hose	68396A	63096
96" Blue Hose	68296A	62096
Fan	RA17516	RA19409
Filter-Drier	34724	34724
Compressor	RA19735	RA19735
Vacuum Pump	RA15425	RA15425
High Pressure Switch	RA19427	RA19427
Main Power Switch	RA19344	RA19343
Vacuum Switch	RA19428	RA19428
Pump Protection Switch	RA19429	RA19429
Automatic Expansion Valve	RA19592	RA19592
Scale Assembly	RA19603	RA19603
Main Circuit Board	RA19594	RA19740
High Side Gauge	RA19742	RA19613
Low Side Gauge	RA19741	RA19614
Low Side Coupler	N/A	18190A
High Side Coupler	N/A	18191A
Automatic Air Purge	RA19476	RA19595
Relays	RA17459	RA17459
Transformer	RA19596	RA19596
Solenoid Rebuild Kit	RA19258	RA19258
UL Circuit	RA19673	RA19673

348012K Replacement Parts

Component	R-12 Replacement Part Number	R-134a Replacement Part Number
96" Red Hose	68396A	63096
96" Blue Hose	68296A	62096
Fan	RA17516	RA19409
Filter-Drier	34724	34724
Compressor	RA19736	RA19736
Vacuum Pump	RA15428	RA15428
High Pressure Switch	RA19427	RA19427
Main Power Switch	RA19344	RA19343
Vacuum Switch	RA19428	RA19428
Pump Protection Switch	RA19429	RA19429
Automatic Expansion Valve	RA19592	RA19592
Scale Assembly	RA19603	RA19603
Main Circuit Board	RA19740	RA19740
High Side Gauge	RA19742	RA19613
Low Side Gauge	RA19741	RA19614
Low Side Coupler	N/A	18190A
High Side Coupler	N/A	18191A
Automatic Air Purge	RA19476	RA19595
Relays	RA17324	RA17324
Transformer	RA19596	RA19596
Solenoid Rebuild Kit	RA19258	RA19258
UL Circuit	RA19673	RA19673

SWITCH	DESCRIPTION
1	HIGH PRESSURE SWITCH-MANIFOLD
2	VACUUM PROTECTION SWITCH
3	13" VACUUM SWITCH
4	HIGH PRESSURE SWITCH-OIL DRAIN

SOLENOID	DESCRIPTION	FUNCTION				
		RECOVER	VACUUM	RECYCLE	CHARGE	FILL
1	RECOVER	X	O	O	O	O
2	VACUUM	O	X	X	O	O
3	CHARGE	O	O	O	X	O
4	RECYCLE	O	O	X	O	O
5	OIL RETURN	O	*	*	O	O
6	AIR PURGE	O	*	*	O	O
7	OIL INJECTOR	O	O	O	O	X
8	FILL	O	*	O	O	O
9	OIL DRAIN	*	O	O	O	O
10	FREE AIR	O	X	X	O	O



INST 0717

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This product is warranted to be free from defects in workmanship, materials and components for a period of one year from date of purchase. All parts and labor required to repair defective products covered under the warranty will be at no charge. The following restrictions apply:

1. The limited warranty applies to the original purchaser only.
2. The warranty applies to the product in normal usage situations only, as described in the Operating Manual. The product must also be serviced and maintained as specified.
3. If the product fails, it will be repaired or replaced at the option of the manufacturer.
4. Transportation charges for warranty service will be reimbursed by the factory upon verification of the warranty claim and submission of a freight bill for normal ground service. Approval from Robinair must be obtained prior to shipping to either an authorized service center or the factory.
5. Warranty service claims are subject to factory inspection for product defect(s).
6. Robinair shall not be responsible for any additional costs associated with a product failure including, but not limited to, loss of work time, loss of refrigerant, and unauthorized shipping and/or labor charges.
7. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.
8. Use of Robinair recovery/recycling equipment with unauthorized refrigerants will void our warranty. Authorized refrigerants are listed on the equipment or are available through our Technical Service Department.

This Limited Warranty does not apply if:

- The product, or product part, is broken by accident.
- The product is misused, tampered with, or modified.
- The product is used for recovering or recycling any substance other than the specified refrigerant type.

CONVERSION TABLE

OZ. LBS.

0.5	0.03
1.0	0.06
1.5	0.09
2.0	0.13
2.5	0.16
3.0	0.19
3.5	0.22
4.0	0.25
4.5	0.28
5.0	0.31
5.5	0.34
6.0	0.38
6.5	0.41
7.0	0.44
7.5	0.47
8.0	0.50
8.5	0.53
9.0	0.56
9.5	0.59
10.0	0.63
10.5	0.69
11.0	0.69
11.5	0.72
12.0	0.75
12.5	0.78
13.0	0.81
13.5	0.84
14.0	0.88
14.5	0.91
15.0	0.94
15.5	0.97
16.0	1 lb.

Visit our web site at
www.robinair.com

or call our Toll-Free

**Technical Support Line at
800-822-5561**

in the continental U.S. or Canada.

In all other locations, contact your local distributor. To help us serve you better, please be prepared to provide the model number, serial number, and date of purchase.

To validate your warranty, you must complete the warranty card attached to your unit and return it within ten days from date of purchase.

• **NATIONWIDE NETWORK OF AUTHORIZED SERVICE CENTERS**

If your unit needs repairs or replacement parts, you should contact the service center in your area. For help in locating a service center, call the toll free technical support line.

Due to ongoing product improvements, we reserve the right to change design, specifications and materials without notice.

The 348002K and 348012K are designed to meet all applicable agency certifications including Underwriter's Laboratories, Inc., SAE Standards and CUL. Proper maintenance of this equipment will provide accurate A/C service for many years.

Certain state and local jurisdictions dictate that using this equipment to sell refrigerant by weight may not be permitted. We recommend charging for any A/C service by the job performed.

This weight scale provides a means of metering the amount of refrigerant needed for optimum A/C system performance as recommended by OEM manufacturers.

SPX

ROBINAIR

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